DOCUMENT RESUME

ED 323 324 CE 055 646

TITLE	Workplace 2000 Project. Final Performance Report.
INSTITUTION	West Virginia Northern Community Coll., Wheeling.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, DC. Div. of Adult Education and Literacy.
PUB DATE	90
CONTRACT	V198A80252
NOTE	36p.; Financial status report not included in the appendices.
PUB TYPE	Reports - Descriptive (141) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Accounting; Adult Education; Adult Literacy; Basic Skills; Corporate Education; Data Processing; Decision Making Skills; Interpersonal Competence; Job Performance; *Literacy Education; *Mathematics Instruction; Problem Solving; *Public Speaking; *Reading Instruction; Technical Writing; *Time Management; *Writing Instruction
IDENTIFIERS	Union Carbide; Weirton Steel; *Workplace Literacy

ABSTRACT

West Virginia Northern Community College provided workplace literacy education and training for employees of Weirton Steel Corporation and Union Carbide Corporation. For Weirton Steel the training included 4,040 hours of instruction in fundamental literacy skills (reading, writing, speaking, and math), oral and written communications (including report writing), problem analysis, decision making, time management, automated data processing using personal computers, manual and automated accounting systems, and interpersonal communications. Weirton participants constituted about one-third of the company's employees. For Union Carbide, there were approximately 96 hours of computer literacy training, 20 hours of communication skills training, 12 hours of interpersonal skills training, and 32 hours of training for instructors. Evaluation of the program revealed that 93.7 of the trainees agreed that stated course objectives were achieved, 81.2 percent agreed the courses taught skills directly applicable to the job, 71.6 percent agreed the information and skills learned would enable them to perform their current jobs more effectively, 51 percent reported using the newly acquired skills on their current jobs, 67 percent indicated the training enhanced their opportunity for job advancement, 50 percent declared they are performing their jobs more efficiently as a result of the training, and 79.3 of supervisors surveyed said the trainees had been able to perform their jobs more effectively as a result of the training. (CML)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED323324

WORKPLACE 2000 PROJECT
FINAL PERFORMANCE REPORT

NATIONAL WORKPLACE LITERACY PROGRAM

PR/Award #V198A80252

TABLE OF CONTENTS

	Pages
FINAL PERFORMANCE REPORT:	
Project Design	**1-6**
Program Implementation	**6-8**
Evaluation	**9-10**
Partnership Achievements	**11-13**
Partnership Issues/Problems	**14**
Policy Implications	**15-16**
Dissemination	**16-17**
APPENDIX:	
Final Financial Status Report (Standard Form 269A)	
Final External Evaluation Report	

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C J Reuther

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE 055646

FINAL PERFORMANCE REPORT

WORKPLACE 2000 PROJECT

WEST VIRGINIA NORTHERN COMMUNITY COLLEGE • WEIRTON STEEL CORPORATION • UNION CARBIDE CORPORATION

National Workplace Literacy Program
PR/Award #V198A80252

The purpose of the Workplace Literacy Act of 1987 is "To improve American competitiveness through grants for workplace literacy programs."

Our partners - Weirton Steel Corporation and Union Carbide Corporation - represent industries basic to the economy of the United States. Weirton Steel is a major manufacturer of flat-rolled steel and Union Carbide is a major chemical producer. The basic industries of steel and chemicals represented by our industry partners were severely affected by the national recession in the early 1980's and have been slow to rebound. To maintain its global leadership role, the United States cannot depend on foreign suppliers; America must maintain its basic industries. Foreign competition in both the steel and chemical industries has eroded many of the traditional markets for domestic suppliers. To compete in a global economy, American companies must modernize their facilities and update their technology. This investment in capital will increase productivity, thus enabling basic industries not only to survive, but to grow. Both of our industrial partners have undertaken major capital improvement programs. With the introduction of high technology equipment and processes, the gap between workers' skills and the increasing skill requirements of the workplace is widening. To bridge this gap, current employees must acquire new and improved basic skills.

PROJECT DESIGN

The Partners

Weirton Steel Corporation

To keep pace with workplace changes resulting from the introduction of advanced technology, computerization, and workteams, Weirton Steel's training department identified three areas of skill enhancement needed by its employees that were allowable activities under this grant.

Providing Basic Literacy Skills

High technology equipment and processes require higher levels of reading, writing, and computational skills. Employees must increase their skill levels in these areas to function on their jobs and advance in their careers; reading levels and speed must be improved to comprehend, analyze, and

summarize job-related materials and information; proper writing techniques must be learned to communicate information in a concise, clear, and correct form both within and outside of the company; and a sound foundation in mathematical operations is essential in controlling product quality, setting specifications to meet exacting customer demands, and tracking inventories and production levels.

Upgrading and Updating Skills in Accordance with Changes in Workplace Requirements, Technology, Products, or Processes

The proliferation of computers throughout the plant to control production, monitor product quality, and process information requires employees to become computer literate to perform their jobs: keyboarding techniques, fundamentals of computer operations, and knowledge of application software are required to enter, retrieve, and manipulate data.

Improving the Competency of Adult Workers in Speaking, Listening, Reasoning, and Problem Solving

To effectively participate in the management of their company and in a workteam environment, employee-owners need to develop and improve their skills in oral communications and listening, time management, problem solving, and decision making. Effective techniques in both speaking and listening are necessary to facilitate the successful transmission and receipt of information; organizational skills and effective use of time are needed to accomplish job tasks efficiently, and the ability to define problems, evaluate alternative solutions, and implement results is critical for successful problem solving.

Union Carbide Corporation

In assessing the training needs of its workforce, Union Carbide identified two skill areas to be addressed during this project.

Upgrading and Updating Skills in Accordance with Workplace Requirements, Technologies, Products, or Processes

Clerical and non-exempt employees must acquire basic computer skills to realize maximum productivity increases of computerized equipment and processes.

Improving the Competency of Adult Workers in Speaking, Listening, Reasoning, and Problem Solving

To effectively interact and communicate with co-workers, and the public, clerical and non-exempt workers need to develop and improve both their oral and written communication skills, as well as their interpersonal skills.

To conduct safety-oriented training, first-line supervisors need to improve communication skills, design effective lesson plans, and develop competent speaking and presentation techniques.

The College

In today's technologically advanced workplace, literacy must be defined in both functional and dynamic terms. In the workplace, literacy means the ability to function on the job. Because of the dynamic nature of today's workplace, literacy, also means the ability to cope with a changing work environment. In functional, dynamic terms, workplace literacy is defined as "knowledge of the fundamentals of a particular job and the knowledge base to adapt to a changing work environment." At our partner organizations, workplace literacy encompasses reading, writing, mathematics, speaking, listening, problem solving, time management, and computer skills.

The following details the various activities and strategies implemented for this project. Throughout this section, we have attempted to identify significant unexpected and/or problematic issues that evolved during the operational phase of this project and how they were resolved.

Curriculum Development

The purpose of the training was to provide the partners' workforces with the new and improved job skills necessary to keep pace with the changes occurring in their workplaces. The internal needs assessment undertaken by both Weirton Steel and Union Carbide served as the basis for designing the curriculum for this project. Because the focus of this project was to provide job-related skills instruction, a functional context approach was selected to promote both the learning process and the retention of the adult trainees. Competency was measured by objective exercises completed for each task as well as a comprehensive exercise at the end of the course. When pre-testing was not viable, the initial exercise served as a benchmark. Even though the college already had instructional modules in place for many of the proposed courses, it soon became apparent that the customization required to meet the particular needs of the partner organizations involved major revisions rather than minor modifications. To address this previously unanticipated effort, the college identified two master instructors with expertise in curriculum design to assume responsibility for and oversight of this area. Company training specialists, supervisors, and employees worked closely with college and project staff in this effort. Course outlines, performance objectives, and instructional materials were carefully reviewed prior to implementation.

Because this training was targeted to provide employees with the skills needed on the job, it was essential to have procedures in place to immediately trigger any required modifications when this objective was not being met. Written evaluations of the courses by trainees, feedback from employees and supervisors, and class monitoring by training department staff and college specialists provided

information for on-going improvement of the courses throughout the project. Curriculum modifications included restructuring modules to place more emphasis on particular topics, adding more actual workplace simulations, and decreasing or increasing the length of courses or sessions.

Training the Trainers

The college has extensive experience in developing and delivering programs designed to meet the training needs of both adult learners and area employers. Based on this experience, the college was fully cognizant of the critical role of instructors selected to teach in this environment. As with all customized training, the college relied primarily on its own full and part-time faculty with expertise in providing customized workplace training to teach for this project. New instructors met the same hiring criteria as regular college faculty, with special emphasis placed on hands-on industry experience and the instruction of adult workers. Because of the negative connotations often associated with the terms 'teacher' or 'instructor' by adults and the fact that these terms are not commonly used in the business community, the instructors for this project were referred to as 'trainers'. Prior to teaching on this project, all trainers participated in an orientation/training program under the direction of the area coordinator. The "Training the Trainer" program consisted of the following components:

Orientation: Culture and environment of employer organization; policies and procedures of the college and industry partner relating to the training; assessment and evaluation instruments.

Training Methodology: Traditional classroom environment vs. industry training environment; teaching vs. training; adult learning theory; job-linked training (success oriented, time-sensitivity, instructor-independent).

Pre-Training: Prior to teaching a course, trainers complete the following processes:

1) **Observation** - The prospective trainer observes the course being taught by the coordinator or approved trainer.

2) **Team-Teaching** - The prospective trainer team-teaches with the coordinator or approved trainer. Trainers, as well as the team trainer evaluate the prospective trainer's performance.

3) **Teaching with Observation** - If performance is satisfactory in the previous phase, the prospective trainer teaches the course with the coordinator or approved trainer observing. If performance criteria is met, the prospective trainer is approved as a trainer for that particular course.

Because the courses required a high degree of standardization, trainers had to be approved for every course they taught.

Promotion

Prior to start-up, the college had assumed that both partner organizations would identify the specific employees to receive training. We were surprised to learn that all training at both partner organizations is offered on a voluntary basis, but later discovered this is the norm in most unionized companies. The only exceptions to voluntary training are training covered in labor agreements for bargaining unit employees or training mandated for some management-level employees. This self-selection process for training required that a major campaign be undertaken to promote this program to the partners' employees.

At Weirton Steel, an extensive internal communication system is in place, with televisions located throughout the facilities to communicate announcements and other work-related information to the employees. Recruitment video tapes were developed by Weirton Steel's communication department with both Weirton Steel staff and employees as well as college and project personnel participating. In addition, two internal publications, "Union Focus" and "Independent Weirton," carried numerous articles about the project, along with course descriptions and registration forms. Eye-catching course brochures and class schedules were mailed to employees at home. Facilitators of employee participation groups (EPG's), union leadership, company officials, and various internal committees were used to promote and advertise the program. In all promotional efforts, emphasis was placed on the job-related customization of the training. To avoid the stigma often associated with traditional literacy courses, the course titles used in this project were carefully selected to reflect direct applicability to the workplace.

At Union Carbide, a training sub-committee promoted the project internally. In addition, college project staff conducted a 'lunch-box' seminar with employees to explain the project and obtain input from the employees regarding the training.

Scheduling: Trainees and Training

Weirton Steel employees signed up for classes by completing a registration form and returning it to the training department. In addition to identifying the courses the employee wanted to enroll in, this form also identified the employee's normal work shift (day, night, flexible). Upon receipt by the training department, registration information was entered into a computer database, and was subsequently provided to the college to develop class schedules.

Weirton Steel maintains continuous operations, with employees working a variety of frequently changing shifts. Because of non-standardized work turns, it soon became evident that the college would have to offer more class sessions than anticipated to accomplish the proposed training. Morning and evening sections of a class were often required for the same group of trainees in order to accommodate shift changes occurring during the time frame of a course. By offering both a morning and evening session, employees could attend either session, depending on their work schedule. While this policy facilitated the

training and retention of employees working turns, it could only be implemented on a limited basis because of budget constraints. With maximum class size of 10-12, the economics of doubling the instructional hours to accommodate this number of trainees must be weighed. When duplicate sections of a course were not offered, employees unable to complete a course because of scheduling conflicts were re-enrolled in the next class offered.

Scheduling of the employees for the training was undertaken by the training departments at each partner organization. Because of the large number of Weirton Steel employees participating in this project, this effort was very time consuming and some problems were encountered. Often, it took two or three attempts to reach employees by telephone to schedule them for a particular course. Also, employees scheduled for a particular class often failed to notify the training department when they were unable to attend. As a result, some scheduled classes had to be canceled because of lack of enrollment while others were conducted with minimum enrollment. To alleviate the scheduling burden being placed on Weirton Steel's training department personnel, employees signing up for certain classes were permitted to register directly with college project staff instead of the company's training department.

PROGRAM IMPLEMENTATION

Weirton Steel Corporation

In assessing company-wide training needs to be undertaken by this project, Weirton Steel based its calculations on its total workforce of 8,000. The original application proposed that 4,040 hours of classroom instruction be provided for approximately 2,667 Weirton Steel employees or one-third of its workforce. Under this initial plan, only 60% of these trainees were targeted for more than one type of skills training. Upon program implementation, Weirton Steel acknowledged the need for employees to receive training in multiple basic skill areas to meet the increased skill requirements of its changing workplace. This shift in corporate strategy to provide more training for fewer employees evolved from several developments: the introduction of advanced technology equipment and processes in the workplace demanded competency in more basic skill areas; some bargaining unit employees were now required to be cross-trained in another craft (a concept known as multi-crafting); and a veteran workforce averaging 40+ years needed to update existing skills before learning new skills. As educators, the college recognized that the increasing range of skills needed by Weirton Steel employees to perform their jobs efficiently required more training. While increasing the competency of employees in multiple skill areas meant training fewer individuals, the college was committed to serving as many employees as possible. By hiring two full-time coordinator/instructors rather than utilizing only part-time instructors (which reduced per unit instructional cost), the college was able to provide 4,800 hours of classroom instruction (a 20% increase over the

4,040 proposed) within the budget constraints of the grant. Approximately 1,800 employees-owners participated in the training (about 70% of the number originally proposed), with the majority of trainees being trained in multiple skill areas. Employees participating in the training were primarily white (95.1%) with an average age of 43, and 75.9% were men.

To meet the workplace training needs of Weirton Steel's employee-owners, West Virginia Northern Community College provided instruction in the following areas:

Reading for the Workplace: An individualized reading program focusing on the areas of basic vocabulary, literal comprehension, and reading rate. Participants study techniques to improve their ability to analyze, summarize, and comprehend job-related materials and information.

Writing for the Workplace: An individualized course designed to help the participant achieve competency in basic language skills, including grammar, punctuation, sentence structure, and paragraph composition. Preparation of job-related written memorandums, reports, and instructions is emphasized.

Fundamental Math for the Workplace: This course reviews basic mathematics, including operations of whole numbers, fractions, decimals, and measurements. Course materials are designed to provide pre-apprentices with math skills required for entry into apprentice programs in certain crafts. Application of mathematical concepts to the workplace is emphasized.

Oral Communications: This course is designed to develop effective speaking and listening skills. Participants study verbal and non-verbal communication skills and listening styles. Participants analyze techniques in a simulated work environment.

Problem Solving & Decision Making: This course teaches participants effective techniques to recognize and define problems, analyze the problem, develop possible solutions, evaluate alternative solutions, implement the solution, and follow-up and evaluate results. Participants work together in small groups and explore real on-the-job problems.

Time Management: This practical course is designed to teach participants how to use time in an organized manner to improve job performance. Activities and behaviors which inhibit effective use of employees' time are explained and participants learn to develop strategies to overcome 'time wasters'. Using techniques of time management, participants develop a time log to analyze their own use of work time; identify personal 'time wasters' that hinder or prevent achievement of work objectives; and develop a strategy to plan, schedule, and control time.

Interpersonal Skills: This course teaches participants to interact effectively with peers, supervisors, and customers. Working in small groups, role playing is used to learn effective communication and listening techniques and conflict strategies.

Keyboarding Techniques: This course explores all areas of the computer keyboard, including the numeric keyboard. Participants learn the touch technique for alphabetic, numeric, and special function keys.

Computers and Information Processing: These courses are designed to teach participants how to enter, access, manipulate, and retrieve information.

Union Carbide

At Union Carbide, all training originally proposed for clerical and non-exempt employees was provided: 62 employees in basic computer operations and application programs, and 39 employees in communications and interpersonal skills. All the participants were white with an average age of 39, and 57.1% were men.

Under this program, the college developed a curriculum to instruct 43 of Carbide's first-line supervisors in techniques to conduct effective safety training. During this project, the company's corporate management mandated extensive training in quality assurance for its employees. Although Carbide's training administrator scheduled several tentative dates for this 'Training the Trainer' program for supervisors, the company was unable to schedule this course within the time frame of the project because of its prioritized internal training commitment.

The following job-related customized training was provided for Union Carbide employees during this project.

Communication Skills: This course is designed to improve written and oral communication skills. Emphasis is placed on preparation of job-related written reports, memorandums, letters, and oral presentation of technical material. Effective techniques for selected audiences is stressed.

Interpersonal Skills: This course teaches participants to interact effectively with peers, supervisors, and customers. Working in small groups, role playing is used to learn effective communication and listening techniques and conflict strategies.

Computers and Information Processing: These courses are designed to teach participants how to enter, access, manipulate, or retrieve information via a computer terminal.

EVALUATION

A comprehensive evaluation was conducted for this project, which included both an internal and external component.

Internal Evaluation

The purpose of the internal evaluation was twofold:

1) To provide information throughout the project to support modifications to improve the training component; and

2) To determine the effectiveness of the training in meeting the objectives of the project.

To conduct the internal evaluation, data was collected from multiple sources: participants completed surveys both upon training completion and after returning to the workplace; supervisors assessed the impact of the training on job performance; and performance-based exercises were used to measure competency. The information collected in these efforts yielded the following findings regarding the educational achievements of the participants and the economic impact of the program.

Functional Context Training Objectives

93.7% of the trainees agreed that stated course objectives were achieved.

81.2% of the trainees agreed courses taught skills directly applicable to the job.

71.6% of the trainees agreed the information and skills learned would enable them to perform their current jobs more effectively.

Program Outcomes

51% of the trainees reported using the newly acquired skills on their current jobs.

68% of the trainees envisioned using the newly acquired skills on their jobs in the future.

67% of the trainees indicated the training enhanced their opportunity for job advancement.

50% of the trainees declared they are performing their jobs more efficiently as a result of the training.

79.3% of supervisors surveyed reported that the trainees have been able to perform their jobs more effectively as a result of the training.

82.8% of supervisors surveyed reported that the trainees in their department have demonstrated an increased knowledge of the material covered in the courses.

79.3% of supervisors surveyed reported that the benefits resulting from this training outweighed the release-time costs.

95.1% of the trainees achieved competency of stated performance objectives.

92.8% of the trainees enrolled in reading, writing, and math courses tested higher in these areas.

Internal Evaluation Summary

The findings identified above support the expected outcomes of this training model in terms of educational achievement, job performance, career advancement, and productivity. This evidence supports the conclusion that replication of this performance-based functional context model is likely to result in the following positive benefits for both participants and employer organizations.

- A high percentage of participants will achieve stated performance competencies.
- Career advancement opportunities for participants will be enhanced.
- The majority of participants will apply learned skills to the job.
- A high percentage of the trainees will perform their jobs more efficiently as a result of the training.
- Improved job performance of employee-trainees will positively impact on the operating efficiencies of employer organization. This impact will occur in a variety of areas, including increased productivity, improved product quality, increased efficiency, improved safety, less absenteeism, and reduced employee turnover.

External Evaluation

An experienced external consultant, Dr. Louis W. Bender conducted a comprehension evaluation to assess the performance of the partnership in achieving stated project objectives and overall program goals. Dr. Bender's report is included in the appendix.

PARTNERSHIP ACHIEVEMENTS

The following achievements demonstrate the value of this cooperative venture between the public and private sectors.

Industry Partners

The infusion of support enabled both partners to increase the efficiency of their workforces now rather than later, thus allowing them to become more competitive sooner.

The external evaluator observed that this project helped management and labor to recognize the gap between their respective positions. It facilitated a sense of appreciation and better self-understanding of their common goal and the necessity to subjugate their respective agendas on behalf of the greater goal.

By increasing the skill level of employee-trainees, this training has promoted a more efficient and productive workforce for both industry partners.

The workplace skills provided by this project will facilitate workers learning other jobs, especially as it relates to multi-crafting.

The College

Faculty have gained a greater sense of the reality of workplace training versus traditional classroom instruction. They recognize the need to maintain flexibility and to be on the cutting-edge in both presentation and learning techniques.

Before this project, the norm was for the business/industry community to come to the college; for this project, the college initiated contact with the private sector.

Academic administrators have learned valuable lessons in designing curriculum for the workplace. The job-related design process and procedures for on-going modifications developed for this project now serve as the model for all business/industry training at the college.

This project has enhanced communications between the college and employers throughout the area, not just the employer-partners. The college's role as a viable provider of quality training to meet the needs of area business and industry has been strengthened.

The non-proprietary courses developed for this project have been submitted to the academic task force to offer as regular college courses.

Summary of Achievements

This tri-partite partnership exemplifies that cooperative ventures between public educational institutions and private industry can play a vital role in meeting the training and retraining needs of America's existing workforce. Because of its success, this demonstration project will serve as a model for future cooperative efforts designed to meet our nation's increasing demand for on-going employee training.

The significance of such joint ventures for the private sector is best summarized by two Weirton Steel training department administrators, who actively participated in both the planning and implementation of this project.

According to Richard J. Mandia, Ph.D., Corporate Training Administrator, Weirton Steel Corporation,

> ***The corporation's ability to survive and prosper in the 90's will in large measure depend upon our employees taking the steps necessary to gain and/or refresh the fundamental skills presented in the Workplace 2000 program. Such basic skills as writing, reading, oral communications, math, etc. will become even more relevant to our employees' jobs as various corporate programs (multi-crafting, the 750 million dollar capital plan, Employee Participation Group reemphasis) are implemented.***
>
> ***Formidable domestic and foreign competition will place a premium on the corporation's ability to meet increasing customer demands of improved quality and service. Those demands will not only require state-of-the-art steelmaking equipment, but just as importantly, a workforce with the skills necessary to control and operate it.***
>
> ***Workplace 2000 has proven to be instrumental in motivating employees to return to the classroom after an absence in some cases of 20-30 years.***

David N. Furda, Corporate Training Coordinator, Weirton Steel Corporation, states

> ***The Workplace 2000 courses play a critical role in the company's training plan for several reasons.***
>
> ***A part of the corporation's "agenda for change" for the 1990's involves a re-emphasis on obtaining even greater employee involvement in solving problems via the Employee Participation Group (EPG) and Statistical Process Control (SPC) Programs. Both of those programs rely upon various problem solving and***

analytical techniques which revolve around the fundamental ability of individuals and groups of employees to clearly communicate their recommendations both verbally and in written form.

On a more personal basis, employees regularly receive a variety of company information. This data may refer to the corporate financial situation, benefit plan changes or stock/profit sharing information, which may require the employee to consider alternatives and select the option which best provides for his/her individual or family needs. The ability to read, analyze, and communicate effectively in such matters is essential to our employees understanding company data and making appropriate financial decisions.

The Workplace 2000 courses are viewed as being a key vehicle which will assist the corporation in freeing and utilizing the rich human potential of all employees to improve our company.

From an educational perspective, J. Michael Koon, Acting President, West Virginia Northern Community College, states

This project demonstrates that the definition of workplace literacy is changing as technology changes the workplace. Basic reading, writing and computation skills are essential but they are not sufficient if employees are to contribute in meaningful ways to make their companies more competitive. The worker of today and the future must have enhanced communication skills, problem solving skills and basic computer skills in order to be functionally literate in the workplace.

While modernizing facilities and industrial processes is important if American industries are to remain competitive, developing the human resource is perhaps even more essential. The responsibility for improving employee skills necessary for the ever-changing workplace must be shared by educational institutions and businesses/industries. Northern was pleased to participate in this partnership not only because it provided valuable training for our industry partners, but also because the experience will enhance our ability to meet industry needs. This successful partnership demonstrates that educational institutions and industry can successfully work together to improve the basic skill levels of employees to meet the needs of the workplace.

PARTNERSHIP ISSUES/PROBLEMS

In any demonstration project, no matter how successful, some unanticipated issues and problems are bound to occur. We are presenting the major ones encountered during this partnership, so those contemplating similar projects will be better informed.

Industry Partners

Scheduling:

a) Multiple scheduling patterns were necessary to accommodate round-the-clock shift workers.

b) The original plan assumed workers identified by the partners would be made available for the training, scheduled in groups, and expected to participate. However, the tradition and culture of both partners is that all training related to worker improvement is offered on a voluntary basis. The obvious consequence of this policy is that many participants were the 'motivated self-starters' while some of those with the greatest need didn't participate.

Supervisors not releasing employees to take training on company time either because of workload or strong personal work ethic.

Tradition and culture of employer organizations not to schedule classes during certain periods because of various holidays, deer hunting season, and prime vacation periods.

Unpredictableness of significant corporate issues which are time consuming for both union and management leadership, e.g. contract negotiations.

The College

The internal staffing problems encountered when releasing full-time faculty to provide training for this project.

Master instructors discovering and adapting to the differences between teaching in the traditional classroom and in an industry environment.

The additional burden and time involvement required of college support staff to implement this program.

The logistics of project staff not being located in close proximity to industry partners' sites.

POLICY IMPLICATIONS

Our experience in this project suggests the following recommendations for policymakers, as well as education and industry partners that could greatly enhance the facilitation and implementation of future Workplace Literacy Programs.

The Congress and Department of Education

Policymakers at the federal level must recognize the need for built-in flexibility in this program. While guidelines tend to standardize, this workplace project has demonstrated rapidity of change, unanticipated events or circumstances, and other external forces which require immediate response by partnership if purposes of Workplace 2000 are to be achieved.

Concept of computer literacy for the workplace as one of the basic skills should be re-examined. This project has demonstrated that computer literacy should be viewed as an extension of basic computational and communication skills required by workers to survive in today's high technology workplaces.

Business/Industry Partner

Both management and labor must fully comprehend the terms of the project and be committed to its success. In addition, there is need for assurance of both understanding and commitment to the training program from top to middle to line/supervisory levels.

To foster participation, develop policies and procedures to insure all appropriate employees have equal opportunity to participate in the training.

Develop and implement written policies to reduce barriers to program participation.

Provide a mechanism for resolving miscommunications, conflicts, or complaints that occur throughout the project at the operational level.

Educational Partner

Develop personnel policy to facilitate faculty and staff participation, particularly when academic calendar does not correspond to project time frame.

Develop a program of professional development to prepare faculty for the transition to train in the workplace.

Establish a policy regarding college employees who choose to participate in similar projects. College employees engaged in workplace training activities

should be treated as an extension of the institution, with recognition of and eligibility to the rights and privileges of on-campus employees.

Recognize workplace instruction as an incubator for development of courses to be incorporated into the college's other programs.

DISSEMINATION

The following details the on-going activities to disseminate information on this project at the national, state, and local levels:

Past Dissemination Activities

Press conference sponsored by Senator John D. Rockefeller, IV's office and West Virginia Northern Community College was held to announce the project. This conference was attended by union and corporate leadership of both partner organizations, public officials, and representatives of area business and industry.

Senator John D. Rockefeller chaired a round-table session to discuss the progress of this project with Weirton Steel union and management officials, college administrators, project staff, and employees who were participating in the training. This session was attended by the press and received extensive news coverage.

West Virginia Northern's president and administrators have presented information on this project to the public and private sectors at both the state and local levels.

A display of photographs and information on this project was exhibited at the state capitol during the West Virginia legislative sessions, at open-houses held at the college, and at a Regional Workplace Literacy Conference in Atlanta, Georgia.

The project director has disseminated information on this project to numerous individuals and organizations throughout the country.

Abstracts on this project were submitted to the ERIC Clearinghouse on Adult, Career and Vocational Education and the Curriculum Coordination Center Network.

Present Dissemination Activities

Manuscripts of articles on this project have been submitted or are in draft form for the following publications: American Vocational Association Journal; Community College Review; and HR Magazine, the monthly publication of the Society for Human Resource Management.

A copy of the final performance report on this project is being forwarded to the ERIC Clearinghouse on Adult, Career and Vocational Education and the Curriculum Coordination Center Network.

A forum proposal is being submitted for presentation at the American Association of Community and Junior Colleges' Convention in April 1991.

The college has a policy of sharing all products associated with this project except those of a proprietary nature.

Future Dissemination Activities

An executive summary of this project is in process. A record was maintained of all inquiries regarding this project and a copy of this summary will be forwarded to those individuals, other appropriate parties, and to all future requests.

Because the college has received a new award to continue to provide training for Weirton Steel employees, this program will continue to be actively disseminated at all levels.

WEST VIRGINIA NORTHERN COMMUNITY COLLEGE
Wheeling, West Virginia

WORKPLACE 2000:

SUPPORTED UNDER A GRANT FROM
WORKPLACE LITERACY PARTNERSHIPS GRANTS PROGRAM
OF THE U.S. DEPARTMENT OF EDUCATION

END-OF-PROJECT EXTERNAL EVALUATION REPORT

June 22, 1990

Dr. Louis W. Bender, Professor
of Higher Education
The Florida State University
Tallahassee, Florida

BACKGROUND

West Virginia Northern Community College (hereafter referred to as WVNCC) received a Workplace Literacy Partnerships Grant from the U.S. Department of Education to provide education and training for employees of Weirton Steel Corporation and Union Carbide Corporation for a fifteen-month period which began October 1, 1988 and will end on December 31, 1989. The grant called for external evaluation services for which WVNCC issued an RFP that required a minimum of two on-site visits by the evaluator. A Contract for external evaluation services was awarded to Dr. Louis W. Bender, Professor of Higher Education at The Florida State University, who carried out the first site visit February 23-24, 1989. A second evaluation visit was carried out November 9-10, 1989 as the End-of-Year Summary Evaluation. At the time of the November visit, WVNCC had a request pending to the U.S. Department of Education for a no-cost extension of the grant to continue training for the period January through March 31, 1990. The request was approved; therefore, a third visit was carried out June 18-19, 1990 as part of preparing this final End-of-Project Evaluation Report.

EVALUATION PROCESS

The evaluation plan for the grant project (hereafter referred to as Workplace 2000) called for both internal and external formative and summative evaluation. One of the responsibilities of the external evaluator during each site visit

was to review the internal evaluation design developed by WVNCC.

By prior agreement with WVNCC, the external evaluator carried out interviews with project staff, corporation officials, and a group of employee participants during the February and November site visits when facilities and equipment used in the education and training were examined. Materials associated with the project were also analyzed in relation to the program objectives. The training areas at the Weirton campus were reviewed and exhibits of training/instructional modules were examined. The progress of each training area was determined and assessed in relation to the plan of operation as well as its value to the project. Planned outcomes were compared with the status, progress and final outcomes. Suggestions or recommendations for improvement were made where appropriate. The Workplace 2000 administration and coordination was also reviewed in reference to communications, coordination, accountability mechanisms, and internal evaluation measures. An exit interview was carried out with the Workplace 2000 Director at the end of each site visit.

RESOURCES UTILIZED IN THE EVALUATION

WVNCC supplied various documents and materials for use by the evaluator and scheduled interviews with appropriate personnel. The following resources were included in the external

evaluation process during the summary visit:

Documents Reviewed:

1. The approved Workplace Literacy Partnerships Grant Program Plan

2. An Evaluation Guide for Bilingual Vocational Training disseminated by the U.S. Department of Education intended to assist Workplace Literacy Projects in carrying out program evaluation.

3. The WVNCC Catalogue and miscellaneous materials requested or volunteered during the site visit.

4. Exhibits of promotional materials, information gathering instruments, and other information specific to Workplace 2000.

Personnel Interviewed:

1. Mike Koon, Acting President

2. Carol Jean Reuther, Workplace 2000 Director

3. Richard J. Mandia, Training Administrator, Weirton Steel Corporation

4. David N. Furda, Corporate Training Coordinator, Weirton Steel Corporation

5. Curtis Fordham, Human Resource Administrator, Union Carbide Corporation

6. Cindy L. Bonfini-Hotlosz, Computers and Information Processing Coordinator, Workplace 2000.

7. Rick Ricketts, Management and Communication Skills Coordinator, Workplace 2000

8. Garnet Persinger, Executive Dean, New Martinsville

9. Patty Lahr, Weirton Employee-Participant

10. Bret Lowers, Weirton Employee-Participant

11. Carol Lynn, Weirton Employee-Participant

12. Tim Reinard, Weirton Employee-Participant

13. Dan Woods, Sr., Weirton Employee-Participant

REPORT OF ACTIVITIES

Workplace literacy is defined as "knowledge of the fundamentals of a particular job". In order to understand the Workplace 2000 Project it is necessary to recognize the unusual, yet dynamic, definition of Workplace Literacy utilized by WVNCC in conceptualizing, designing, and implementing its program. As viewed by WVNCC in Workplace 2000, "Employees considered functionally 'literate' by traditional yardsticks are functionally 'illiterate' in terms of the changing demands of their jobs." The traditional definition of literacy has expanded to encompass reading, writing, speaking, listening, problem-solving, and computer skills needed by the cooperating major steel company, Weirton Steel Corporation, and major chemical corporation, Union Carbide. The pace of technological change and intense foreign competition in both steel and chemical industries have required both Workplace 2000 partners to reconceptualize the present and future workplace literacy of their human resources. In the judgment of the external evaluator, the courses for this Project were and are relevant to the needs of the employers and the participant employees. Course content was designed on competency needs identified by each of the partner corporations. Furthermore, classroom instruction typically focused upon subject matter which was directly related to the actual job of many employee-participants.

I. Weirton Steel

The original Workplace 2000 Grant Proposal documents the dynamic changes being carried out by Weirton Steel as it competes technologically with global steel producers. There were precise numbers of employees to be trained and the type of training envisioned for the Project based on internal company analysis including self-identified and supervisor-identified needs. Both management and union leadership pledged support to the Workplace 2000 Project. The external evaluator was initially surprised during the first site visit to learn that participants in the training program would be self-selecting rather than designated by management. However, it became clear voluntary participation is the mode of most all personnel development programs at Weirton, an employee-owned corporation.

Promotion: An impressive promotional program was carried out during the Project involving in-plant and community information, course schedules and registration forms. A very impressive recruitment video tape was developed cooperatively by the Weirton Steel Training Department and WVNCC. This video tape was used on the internal TV system broadcast throughout the plants (including lunchrooms and rest areas) which is the primary means for communicating announcements, schedules, and related worker information at Weirton.

Program: The Project plan called for seven different areas of training, representing 4,040 hours of instruction. The initial goal called for approximately one-third of the Weirton

employee workforce to receive instruction during the Project. While the original plan noted the expectation some employees would require more than one type of training, subsequent company policies and management priorities resulted in a heavier than expected level of multiple training for a smaller number of employees. For example, the external evaluator found the number of different courses completed among the five employee-participants interviewed during the second site visit ranged from two to six with a mean of three different courses per participant. The Weirton officials explained to the external evaluator that they had sought the policy change as a result of two developments. The first was the experience of learning the single course was not enough training for the degree of desired change. While the training was focused on the actual workplace tasks and requirements, management found the need for additional competencies. In some cases this resulted from hardware and software changes in new technology being installed and requiring different applications. The second development emerged from the success of the Project itself. The positive feedback of the employee-participants encouraged management to introduce a new human resource policy calling for employees to become proficient in more than a single job area (a concept called "multi-crafting".) Employees are trained to carry out several different job functions under this new policy.

The program of training included the following subject areas:

1. Fundamental literacy skills (reading, writing, speaking, math)
2. Oral and written communications, including report-writing
3. Problem analysis and decision-making
4. Time management
5. Automated data processing (PCs and software)
6. Accounting systems (automated and manual)
7. Interpersonal communications.

In response to a question from the external evaluator, Weirton officials expressed satisfaction with the original choice of subject areas, stating they would not make any changes if it were the beginning rather than the end of the Project period.

Participants: As previously observed, the Workplace 2000 proposal envisioned some training for approximately one-third of the workforce of Weirton involving over 4,000 hours of instruction. The external evaluator observed the WVNCC emphasis upon numbers of employees rather than upon instruction on the U.S. Department of Education Quarterly Report forms. In this case, the employer, Weirton Steel, determined the purposes of the authorizing statute "To improve American competitiveness through grants for workplace literacy programs" could best be served by shifting the emphasis to additional courses and more instructional hours for a smaller number of employee participants. While the actual figures on unduplicated headcount or instructional hours were not able to be calculated for the entire Project period, it appeared during the last site visit that WVNCC actually offered more classes than projected, will

have actually provided about as many hours of instruction as projected, but served a smaller number of employees.

The external evaluator questioned the Weirton officials diligently on the desirability, appropriateness, and satisfaction with this profile. They were emphatic in acknowledging their role in the policy shift and their satisfaction with the outcome.

Performance: Performance measures were directed toward the instructors, the instruction, the participants, and the overall impact of the project. Faculty performance was evaluated before, during, and after instruction. A policy of WVNCC called for the new faculty to observe existing classes and then to co-teach a class before being permitted to assume responsibility for a class. Course outlines and instructional materials were standardized and made available for each class taught. The instruction was evaluated by the students at the end of each class using two evaluation instruments (one for Weirton for its use, and one by WVNCC for Project 2000 use). The evaluator examined a random sample of WVNCC student evaluations and found consistent satisfactory to very satisfactory ratings and open question comments to be uniformly positive and judging the learning experience as beneficial to their work as well as their personal development. Weirton supervisors have been asked to rate the applicability of the courses to their respective areas as well as the question of whether employees are more productive as a result of the training. At the time of the second site visit, only anecdotal testimony was available although this was

positive and it is anticipated hard data would be collected for inclusion in the End-of-Project report. During the third site visit, the evaluator reviewed two end-of-project follow-up survey instruments which had been designed and administered to (1) participants and (2) their supervisors. Data analysis had not been completed at that time but was due in a matter of hours. A random scanning of actual returns suggested a very positive response and participant comments were consistently positive. Finally, the Weirton officials expressed their belief that the program has had a positive impact upon their company. One official credited Workplace 2000 Project with contributing to two recent policy decisions made at corporate headquarters. One was to increase the rate and amount of capital investment in high technology over the next five years and the other was the policy for multi-crafting as described earlier.

Problems

The Weirton Steel pattern of work shifts, flex time, and operations patterns result in an amazing diversity of days and times when an employee can be available for training. When some departments are on line, others are off and therefore the Project experienced logistics problems of scheduling, class size variations, and occasional class cancellations which appear to be unique to Weirton Steel and apparently insurmountable for some units of the plant.

> Recommendation: It is recommended that Weirton Steel review its policy of "During Hours" participation of employees, particularly in departments or units where broader coverage of employees would be beneficial.

There appears to be a correlation between "During Hours" and high class enrollment patterns. It is also recommended that the College and Weirton consider a new policy which would make Weirton employee spouses eligible to take classes on a "space available" basis. Since Weirton is employee-owned and seeks to perpetuate the family concept, this policy would appear to be beneficial and appropriate as long as it does not impinge upon the employee training.

A second problem area was revealed from comments and observations by the Weirton employee-participants during interviews with the external evaluator on the second site visit. Apparently, some supervisors and stewards are so task oriented that they are not sympathetic to any perceived training not directly related to the present job requirements. This mitigates against the basic concept of the Workplace Literacy Project. It results in employees in such units being forced to schedule all training during personal time, a complication in view of the scheduling logistics described above and a morale problem according to several employees.

Recommendation: It is recommended that Weirton Steel more deliberately communicate the importance of Workplace 2000 to such supervisors/stewards. In addition, an effort should be made to determine in which departments/units and how large an employee pool is involved because of the situation described. Finally, it is recommended that Weirton and WVNCC schedule selected classes on experimental basis at the plant (particularly during the January-March extension). The employees interviewed express the view more would participate if they could do so at the plant.

A third problem observed by the evaluator was inconsistent policy-making at different management levels throughout the Project and a timidity on the part of WVNCC top administrators to confront or challenge the situation. For example, top Weirton

officials assured the external evaluator on his first site visit that should projected or anticipated number of employees not participate under the voluntary policy, union leadership would be directly involved in a joint definitive solution of the problem. The evaluator was aware of several critical management/union negotiations taking place during the Project including changes in capitalization, stock variations, and new contracts. Yet, labor has as critical a need to promote and be involved in the Project as management. The evaluator had the impression "personalities" played a part in this but was unable to determine the nature or extent involved.

> Recommendation: It is recommended that top leaders of (a) Weirton Unions, (b) Weirton management, and (c) WVNCC administration hold a joint "summit" meeting for the purpose of reaching mutual agreements on any future Workplace 2000 activity. All three are vital to achieve the maximum benefit and result of the Project.

The final problem grows out of the external evaluator's review of the worker literacy components of the Project. For example, in the reading area, the pre-test/post-test results reveal the majority of participants as having 8th grade or above reading skills whereas it would have been anticipated the program would serve many with lower reading skills. As a result, it appears that many participants were seeking speed reading and reading comprehension improvement rather than developing basic reading skills. While the benefits to such participants represent ample justification for the program, the external evaluator believes the intent of Project 2000 was to help workers who may encounter the greatest difficulty because of reading

deficiencies. Weirton's new "multi-craft" policy requiring employees to be trained in additional job areas involves workers with all levels of reading skill.

> Recommendation: It is recommended that Weirton Steel incorporate the Workplace 2000 Literacy courses as part of its strategy for implementing the multi-crafting policy. This could be accomplished by targeting those departments where training will be taking place and where the greatest probability of reading deficiencies exist. Supervisors could then be encouraged to identify those workers who should participate in the basic skills areas such as reading and math.

II. Union Carbide

The other partner in the Workplace 2000 Project was Union Carbide, a major chemical producer which competes on a world-wide basis. The Project provides for computer literacy and oral/written communication skills training much like that provided to Weirton Steel. A different component at Union Carbide is focused upon trainer skills development of first-line supervisors responsible for carrying out safety training for their workers, a critical and indispensable need in the chemical-producing industry. At the time of the second site visit, both the communications and trainer skills were yet to be provided as a result of schedule delays requested by Union Carbide and a staff change required by the departure of the Union Carbide Human Resource Associate responsible for the Workplace 2000 Project. Voluntary participation was also the policy for training at Union Carbide as described earlier for Weirton.

Promotion: Union Carbide utilized a monthly "Lunch Box Seminar" for promoting the program since it is traditionally used

by the company for addressing various topics of interest to the corporation or employees. Seminars on Workplace 2000 offerings was provided during an extended lunch hour. A seminar orientation on computers resulted in a strong registration for the computer literacy courses.

Program: The training proposed included 96 hours of computer literacy training, 20 hours of communications skills training, 12 hours of interpersonal skills training, and 32 hours of Training the Trainer instruction. Union Carbide carried out a needs assessment prior to the project and identified the programming outlined. The computer literacy courses were designed in response to the identified needs of Union Carbide together with the Workplace 2000 Coordinator of Computers and Information Processing, Cindy Bonfini-Hotlosz.

At the time of the second site visit, all computer training had been delivered. In fact, WVNCC provided more classes than the plan had called for in order for groups of approximately 10 employees rather than the 15 per class as originally projected.

It was learned on the third site visit that Union Carbide officials had cancelled the Training of Trainers component because of internal training priorities. The nature and cause of these priorities was not revealed. The external evaluator was informed by Union Carbide officials that they were satisfied with the instruction selected for the Project as well as that delivered. It should be observed that the communication and interpersonal skills classes had been rescheduled and completed

during the 1990 January-March extension.

Participants: Union Carbide officials observed participation in Project Workplace 2000 would be minimal during November and December of 1989 because of the tradition among plant employees to take vacations, go deer hunting, and celebrate the various holidays during these two months. It proposed and WVNCC agreed to reschedule the training for the 1990 January-March extension. Union Carbide assigned space at the plant to facilitate this program.

Union Carbide officials assured the external evaluator they were pleased with the participation pattern and the accommodations provided by WVNCC.

Performance: Performance measures at Union Carbide were comparable to those described for Weirton. Student evaluation forms reflected satisfaction for the computer literacy courses completed.

Problems

Two problems were identified with this component of the Project. First, there was turnover of the staff person at Union Carbide responsible for coordination, promotion, scheduling, and supervision. Apparently a time lag occurred in recruiting a successor. At the time of the site visit, Union Carbide had just recently employed a new Human Resource Associate who was too new to know much about the Project. It appeared that she would be very involved before the end of the Project Year, however.

The second problem dealt with location of training.

Initially, Union Carbide had expected to equip a meeting room in Sistersville which is close to the plant. When that was not possible, worker-participants were asked to travel to the New Martinsville campus of WVNCC. There was criticism of the amount of driving time required for this and future training will take place at the plant.

Recommendations: It is recommended that Union Carbide provide an early schedule of the times and places for instruction. It is further recommended a suitable space at the plant be made available for all training.

WORKPLACE 2000 PROJECT ADMINISTRATION AND EVALUATION

Workplace 2000 provides for a director and two coordinators. All three positions are filled with highly qualified and enthusiastic professionals who work closely with the campus executive deans and the corporation training coordinators in carrying out planning and programs. The external evaluator observed an effective project administration.

WVNCC has had prior experience with federal programs and therefore meets all federal accounting, civil rights, and related federal requirements and regulations. Appropriate audit trails are provided. All Workplace 2000 personnel are aware of their responsibilities and appropriate time and effort documentation is produced and formal communications documented. In addition, appropriate formative and summative evaluation measures are being used or developed.

Problems

There were no problems identified related to Workplace 2000

administration and evaluation.

Workplace 2000 Impact

Officials of both corporations participating in this partnership observed their belief the short and long-term impact of the Project to be positive and significant. Corporation training programs do not usually include fundamental literacy skills provided as part of the training in this Project. It was also observed the WVNCC Project provides a positive image for motivating worker choice for self improvement as well as a status which can assist employers in encouraging self improvement beyond hands-on activity. Finally, it was observed that the College benefits as a result of faculty becoming aware of the reality of the corporate world and workplace requirements in contrast to the hypothetical context of classrooms. In the judgment of the external evaluator, Workplace 2000 could well open up a new vista of literacy as conceptualized and of partnerships as being carried out in this Project.

Louis W. Bender — June 22, 1990.

Louis W. Bender — Date